The standard FM video bandwidth in consumer electronics products today is 40 MHz. This is used, for example, in C-band satellite receivers. Consequently, it is economically feasible to build low cost receivers for Hye Crest customers using this bandwidth. Admittedly, certain other transmission systems, such as broadcast studio-to-transmitter links, use a somewhat narrower bandwidth for FM video transmission. However, the tighter technical specifications used in those products make them far more expensive than would be justified for a consumer electronics product. We note that in the microwave band closest to 28 GHz, namely 23 GHz, video is transmitted in a 50 MHz channel. With this as a benchmark, a 40 MHz channel is seen to be reasonable. At 40 MHz per channel, a service offering of 24 channels requires 960 MHz of bandwidth.

c. Selection of Wide-Beam/Omni-Directional Antennas Supports Efficient Spectrum Utilization.

The 27.5-29.5 GHz band is listed in Section 21.701 of the Commission's Rules as being available for assignment in the Point-to-Point Microwave Radio Service. However, because of the nature of the service that Hye Crest proposes to offer, wide-beam or omni-directional antennas would be more spectrally efficient than high-gain highly-directional point-to-point antennas.

Hye Crest proposes to provide communications links to a multiplicity of locations. Section 21.108 of the Commission's Rules specifically provides:

> "Where a station communicates with more than one point, a multi- or omni-directional antenna may be authorized if necessary."[19]

It might be technically feasible for Hye Crest to provide its service to a multiplicity of locations using a multiplicity of point-to-point links. However, such an approach would be neither economically feasible nor spectrally efficient because multiplicity of point-to-point links would require a separate transmitter and transmitting antenna for each link. The cost of the transmission equipment would be prohibitive, and it would be impractical to find adequate rooftop space to install the large number of antennas involved.

A multiplicity of point-to-point links also would make inefficient use of the spectrum. Because each link might interfere with the adjacent link originating from the same site, additional frequencies would be needed to provide adequate isolation. Re-use of the same frequencies on adjacent links by means of cross-polarization isolation alone would probably not be feasible. Twice as much spectrum would be needed, compared with omni-directional transmission.

3. GRANT OF HYE CREST'S APPLICATION WILL NOT DEPRIVE COMMON CARRIERS OF NEEDED POINT-TO-POINT MICROWAVE SPECTRUM

Several parties oppose the Hye Crest proposal on the grounds that the 27.5-29.5 GHz band must be preserved for point-to-point

---

[19] Moreover, Section 21.108 does not contain any explicit antenna directionality specifications for the 27.5-29.5 GHz band.

use to satisfy essential requirements.[20] In fact, there is plenty of spectrum available at lower frequencies to satisfy point-to-point needs and adequate growth capacity at higher frequencies.

The 27.5-28.5 GHz band is a portion of one of the five frequency bands available for short-haul use:[21] 17.7-19.7 GHz; 21.2-23.6 GHz; 27.5-29.5 GHz; 31.0-31.3 GHz; and 38.6-40.0 GHz. Taken together, these bands cover a total of 8.1 GHz of spectrum available for point-to-point use.[22]

While these five frequency bands are available for short haul point-to-point use, only the 18 and 23 GHz bands are actually in use at this time. Although well within the state-of-the-art, there is actually no equipment available on the market for the three higher bands underscoring the fact that there is no current demand for point-to-point uses in these bands.[23]

---

[20] Bell Atlantic Comments P.2; Southwestern Bell Comments P.3; and NSMA Comments P.4.

[21] Other common carrier microwave bands, at 2, 4, 6 and 11 GHz, are more suitable for longer haul communications needs.

[22] In contrast, the lower frequency bands at 2, 4, 6 and 11 GHz contain only 2.4 GHz.

[23] In this connection, the unsupported claim in the MTN Comments (P.4, FN.12) that such equipment is "becoming available" on a "commercial" basis "at a reasonable price" is simply not true. None of the comments filed in this proceeding identify any instance of point-to-point use of the 27.5 - 29.5 GHz band or any examples of commercially available equipment. Nor to our knowledge is there any equipment for which type acceptance filings have been made.

The two lower bands, 18 and 23 GHz, offer plenty of capacity to meet existing and future needs in New York. This is best confirmed by the testimony and evidence prepared for by NYNEX Corporation and submitted to the U.S. District Court.[24] This material was prepared in support of its request for waiver of the Modified Final Judgment in order to be permitted to exercise an option to acquire ownership in the PTAT private undersea cable system. A copy is attached as Exhibit A for the convenience of the Commission.

The NYNEX testimony confirms that there is no shortage of 18 and 23 GHz microwave spectrum in New York, and no foreseeable need for point-to-point use of 28 GHz.[25] Moreover, growth in the demand for point-to-point microwave is being diminished because of the widespread use of fiber optics by Teleport Communications in the New York City area.[26] As the major supplier of short haul communications links in New York, NYNEX's testimony should be given substantial weight.

In a study attached to the testimony, a consultant has analyzed short haul microwave usage in New York by reviewing a data

---

[24] Affidavit of Jerry A. Hausman in United States of America v. Western Electric Company and AT&T, Civil Action No. 81-0192, April 29, 1987.

[25] See Affidavit of Jerry A. Hausman at Paragraphs 26-28.

[26] See Affidavit of Jerry A. Hausman at Paragraph 19.

base of coordinated and licensed microwave links.[27] The study determines that there is little or no frequency congestion at 18 and 23 GHz in the Manhattan area, which might be expected to be the most congested area of the country.[28]

According to the consultant, both the 18 and 23 GHz bands have enormous capacity to satisfy voice or data point-to-point needs. For example, the 23 GHz band can support more than 16,000 voice circuits between any arbitrary pair of points.[29] Of course, this is just a "drop in the bucket" compared to the capacity of a fiber optic link.[30]

The study analyzes a data base of over 800 microwave links in the Manhattan area. Each link can correspond to one or more radio channel(s) operating along the same path. The largest user of microwave in this area, according to the data base, is Local Area

---

[27] "High Capacity Transmission Alternatives in Lower Manhattan" by Charles L. Jackson, April 15, 1987 (hereinafter "Study"). A copy of this study is included in Exhibit A hereto.

[28] Study, P.9. It appears that many links in these bands are being "warehoused" by being coordinated but not licensed. Study, P.10.

[29] Study, P.16.

[30] Study, P.5. "An off-the-shelf fiber can carry hundreds of millions of bits per second...The best of fibers can carry billions of bits per second." Assuming a data rate of one billion bits per second (1 Gb/s) on a fiber, a voice coding rate of 32 kb/s per voice channel, and ten fiber pairs in a fiber optic cable, the capacity of a fiber optic link would be 312,500 voice circuits. While there is some congestion in duct space in Manhattan, access is available to the vast majority of buildings. Study, P.6.

Telecommunications, Inc. with 319 of the links, although only 86 appear to be licensed. The remainder apparently are being held in reserve pending future customer requirements. Surprisingly, New York Telephone Company (a NYNEX subsidiary) is shown in the data base as having only four links at these frequencies.[31] Consequently, based its own testimony, NYNEX is not a significant user of short haul point-to-point microwave.

In the event the 18 and 23 GHz bands start to become congested in New York, there are numerous alternatives still available. Even after the grant to Hye Crest, the 28.5-29.5 GHz band would remain available for point-to-point use. The 38.6-40.0 GHz band is available. The 37.0-38.6 GHz band, which has been listed in Section 2.106 of the FCC Rules as being available to Part 21 users ever since the implementation of the 1979 WARC[32], could be added to Part 21. Additional capacity could be obtained within the 23 GHz band through the following standard spectral optimization approaches not now employed in this band: the 23 GHz band could be channelized with narrower channels than the 50 MHz which is now the de facto standard; a tighter frequency stability could be adopted; and a "bits per second per Hertz" spectral efficiency standard could be imposed in this band. Finally, as discussed in

---

31 New Jersey Bell (a Bell Atlantic subsidiary) has 14 links in the data base.

32 Second Report and Order in Gen. Docket No. 80-739, released December 8, 1983, FCC 83-511, 49 Fed. Reg. 2357 (January 19, 1984).

more detail in Section 4 below, there is a possibility that some point-to-point links could operate on frequencies in the 27.5-28.5 GHz band in New York, sharing the spectrum with Hye Crest.

In summary, the grant of the Hye Crest application will not deprive common carriers of essential point-to-point spectrum and thereby degrade service to the public. On the contrary, there is a more than adequate supply of spectrum for short haul links in New York. Moreover, common carriers including NYNEX and Teleport are installing optical fiber links with capacities that exceed the capacity of the already more than ample capacity of the microwave spectrum. In summary, there is no need to deny the public the many benefits of Hye Crest's proposal in order to preserve the 27.5-28.5 GHz band exclusively for point-to point use in the New York City SMSA.

4. OMNI-DIRECTIONAL OPERATION AS PROPOSED BY HYE CREST WILL NOT PRECLUDE FUTURE USE OF CO-CHANNEL 28 GHz FREQUENCIES FOR COMPATIBLE POINT-TO-POINT OPERATIONS.

As described above, Hye Crest has engineered its proposal to utilize frequencies which will not unreasonably limit the foreseeable growth of point-to-point service in the New York City area. There is much unused spectrum to accommodate future point-to-point needs before any possible question about co-channel operations of omni-directional and point-to-point systems would arise.

While the need for co-channel operations is highly problematic at this time, possible 28 GHz co-channel operation of point-to-

point facilities in the New York City need not be "precluded" as claimed by several parties.[33]

In adjacent areas (e.g., New Jersey, Connecticut), the 27.5-28.5 GHz band may be employed for point-to-point use, even while it is used with wide-beam antennas in New York. Because of the level of atmospheric attenuation at these frequencies, it is likely that frequencies can be re-used without fear of interference at relatively short distances, perhaps on the order of ten miles or closer. Cross-polarization isolation,[34] interstitial channel spacing modulation differentiation, and other standard techniques could be employed to re-use frequencies even at closer distances than 10 miles. The concerns raised by the telephone companies in their comments are both premature and overstated.

There is even the possibility that point-to-point links may be operated within the 27.5-28.5 GHz band within New York compatibly with Hye Crest's use. This would involve careful engineering and coordination, including attention to channel plans, modulation, polarization and antenna beamwidth.[35] But it appears to be feasible so long as the point-to-point transmitter is aimed

---

[33] Bell Atlantic Comments P.2; NYNEX Comments P.2; Southwestern Bell Comments P.4; and BellSouth Comments P.2.

[34] Hye Crest intends to use cross-polarization isolation as the primary means of re-using frequencies from one cell to the next adjacent cell.

[35] The receive antennas that Hye Crest will use are highly directional, with a 2 degree beamwidth and a front-to-back ration of about 60 dB.

at least 10 degrees away from the Hye Crest cellular transmitter. In the event the theoretical circumstance should arise where no other microwave frequencies or fiber optic facilities are available and there are point-to-point requirements that cannot otherwise be satisfied, Hye Crest will cooperate with other carriers to accommodate such needs. Moreover, Hye Crest is also prepared to cooperate with other carriers, appropriate industry associations and frequency coordination bodies at any time to develop technical criteria for future frequency sharing and exchanging of coordination information.

5. HYE CREST'S USE OF THE 27.5 - 29.5 GHz BAND IS NOT INCONSISTENT WITH THE SHARED USE OF THIS BAND FOR FIXED SATELLITE (EARTH-TO-SPACE) OPERATIONS.

The 27.5-29.5 GHz band is allocated for Fixed-Satellite (earth-to-space) as well as Fixed use. Although no party has claimed that the Hye Crest proposal is inconsistent with such shared use, we take this opportunity to deal with the question should it arise.

The 27.5-29.5 GHz band lies within the uplink portion of what is known as the satellite Ka-band. The potential interference mechanism would be from the terrestrial microwave transmitter to a receiver onboard a satellite. Thus, the situation at 28 GHz is comparable to the 6 GHz band, which is shared between terrestrial microwave and a satellite C-band uplink.

Unlike C-band, there are no Ka-band satellites in use or planned at this time. In light of the technical advances that have

increased the capacity of C-band and Ku-band satellites, and the increased role of fiber optics as a long haul communications medium, it is unlikely that Ka-band satellites will be launched for many years.[36]

Since the Hye Crest system design uses transmitting antennas that radiate parallel to the surface of the earth, the only possibility of interference would be into a satellite located at the horizon. This is the same configuration that would cause interference at 6 GHz. However, we are not aware of any reported instances of interference from 6 GHz terrestrial microwave into satellites, nor do we expect any to occur at 28 GHz.

Lacking a specific Ka-band satellite system design, we are unable to calculate potential interference from a terrestrial transmitter pointing at a satellite. However, we note that the Commission's Rules incorporate a "safe harbor" effective power

---

[36] Dr. John Evans, Director of Comsat Laboratories, was asked about the possible use of 28 GHz (Ka-band) for satellite communications in a presentation he made to the Commission on September 27, 1988 covering new satellite technology. This was his response:

Q.-Could you tell us when you foresee commercial satellite operations on the higher satellite frequencies (30 and 20 GHz)?

A.-Comsat currently uses the C and Ku-bands. The ACTS experimental satellite will operate at 30 and 20 GHz. At these frequencies, rain is a serious problem. We don't foresee any commercial use of the Ka-band in the near future. We won't need the additional frequency capacity. Frequency re-use at Ku-band should accommodate our growth. Circuit multiplication techniques will somewhat mitigate the need for higher frequencies. Going to multiple beam satellites will give more frequency re-use. If I were to speculate, I would say that Intelsat probably won't see any use of the Ka-band before the year 2000.

level for 6 GHz terrestrial microwave of +47 dBW. The Hye Crest transmitters, using low gain wide-beam or omni-directional antennas with gains of 6 -12 db, are unlikely to exceed +15 to +20 dBW in effective radiated power. This fact, taken together with the increased atmospheric attenuation at 28 GHz compared with 6 GHz, assures that Hye Crest transmitters will not cause interference into Ka-band satellites.

6. THE DESIGNATED SERVICE AREA APPROACH SIMILAR TO THAT PROVIDED FOR CELLULAR TELEPHONE SERVICE SHOULD BE EMPLOYED HERE.

In response to the comments of MTN (pp.4-5), the designated service area approach proposed by Hye Crest reasonably addresses the need for efficient system design and operation without unnecessarily limiting access to frequency coordination information in the event of possible co-channel or adjacent channel point-to-point operations in the New York City area as described in Section 4, above.

The Hye Crest technical approach is similar in some regards to the cellular radiotelephone communications systems operated in the 825-845/870-890 MHz range. In each case, the license would cover a designated geographical service area. In each case, frequencies would be re-used at a number of transmitter sites throughout the service area.

The designation of a service area is an essential element in the re-use of frequencies given the relatively short usable range of 28 GHz frequencies at state-of-the-art power levels and rainfall

attenuation factors. With a designated service area approach, the licensee has the flexibility to select transmitter sites that allow re-use and provide adequate coverage and capacity to meet local needs. The Commission specifically afforded this flexibility to cellular system designers.[37]

Conversely, if a designated service area approach were not adopted, every transmitter site would be subject to competing applications. It would be impossible for a licensee to grow its system coverage area to cover an entire market based on a consistent plan of site, frequency, polarization and power level selection. Moreover, processing of license applications would impose a significant burden on Commission resources which is neither necessary nor useful.

Hye Crest has proposed the Commission's notification procedures described in Section 21.711 of its rules be applied here to avoid this burden. In the event the Commission is not disposed to approve this approach, however, the licensing procedures under Section 21.41 of the Commission's rules would also provide adequate flexibility for Hye Crest to implement a consistent and efficient system design.

Moreover, it is important to recognize that Hye Crest, like cellular radiotelephone systems, will be competing with other offerings that serve an entire metropolitan area. Disjointed

---

[37] Report and Order in CC Docket No. 79-318, 86 FCC 2d 469 (1981) at Paragraph 87.

coverage, gaps in available channel capacity, impaired signal strength would unnecessarily diminish the marketability of this new competitive service. Absent the economies of scale available from operations which cover the entire city, Hye Crest would be unable to compete effectively particularly with the entrenched and at this time predominant presence of conventional cable television in the market.

7. **OPERATION OF THE HYE CREST SYSTEM ON A NON-COMMON CARRIER BASIS WILL ENCOURAGE THE DEVELOPMENT OF THIS COMPETITIVE VIDEO CHANNEL SERVICE AND HAVE OTHER PUBLIC BENEFITS.**

Southwestern Bell's arguments with respect to the non-common carrier designation requested by Hye Crest ignore or misconstrue the effect of such designation. Non-common carrier status reflects only a Commission decision to forego application of direct common carrier regulation in favor of reliance upon marketplace mechanisms. Contrary to Southwestern's claims, the question of possible use of common carrier frequencies pursuant to authorizations granted in other private radio services (i.e., Parts 74, 78 or 94) is simply not presented here.

As described here and in its application, Hye Crest's proposal is a logical application of the same principles which the Commission applied when it has previously found under Section 1 of the Communications Act that non-common carrier designation would yield important public benefits in Domestic Fixed Satellite Transponder Sales, 90 FCC 2d 1238 (1982) and later in Non-Common

Carrier MDS, supra. See also Wold Communications, Inc. v. FCC, 735 F2d 1465, 1475 (D.C.Cir.1984)

Hye Crest will distribute video entertainment programming in competition with a number of other distributors of such programming. As described above, there is already significant development of alternative video channel delivery systems so that Hye Crest's proposal will be only one of several choices available to consumers in the New York area. There is no need to subject its offerings to the full rigors of Commission's common carrier regulation in such circumstances.

At the same time, there are important benefits to be afforded consumers by grant here because Hye Crest intends to use the flexibility of non-common carrier status to enhance its ability to meet consumer needs in terms of competitive prices, expanded diversity of programming, and innovative program delivery capabilities. Also important here is Hye Crest's commitment to implement facilities to operate on unused and previously unusable spectrum with associated technological innovations.

These benefits demonstrate the logical and compelling basis for Hye Crest's decision to request non-common carrier designation.

8. GRANT OF THE HYE CREST APPLICATION FOR WAIVERS IS A SOUND AND EFFICIENT MEANS OF ACHIEVING THE COMMISSION'S SPECTRUM MANAGEMENT OBJECTIVES.

A number of the parties have claimed that Hye Crest's waiver application is an improper means of spectrum management and that the Commission should proceed by rulemaking rather than by

waiver.[38] On the contrary, the waiver approach is the most efficient and appropriate means of addressing the significant opportunities for a new and innovative service offering to benefit New York consumers.

Hye Crest has identified an important need for service to the public in the New York City area which can only be met through the grant of appropriate waivers to permit use of vacant 28 GHz spectrum. In order to use this spectrum, it has conducted through an affiliated entity, experimental testing to confirm the design of what will be the first commercially available equipment to function in this frequency band, is having this equipment manufactured and has completed the fundamental steps for construction and operation of a commercially viable new service for the New York City area.

Hye Crest has already submitted substantial support in its application for grant of the requested waivers and has supplemented that support here in the sections of this pleading which demonstrate the public need for its proposed service, the carefully crafted design parameters for the facilities involved, and the relationship of each such design decision to the fundamental purpose of making available to the public the benefits of previously unused transmission capacity. Rather than repeat those matters here, we reference those sections which make clear that the frequencies at issue are available, that there is sufficient

---

[38] Comments of Southwestern Bell, P.8; Comments of NSMA, P.5; and Comments of NYNEX, P.2.

remaining channel capacity to meet needs for point-to-point uses, and that the procedures proposed for the construction and operation of Hye Crest's proposal will not unreasonably limit the use of the 27.5 - 29.5 GHz band by other applicants.

In this connection, the arguments of Southwestern Bell based upon MMDS Non-Common Carrier Order, 2 FCC Rcd 4251 (1987) misconstrue this decision which is in fact irrelevant to the matters at issue here. The language in footnote 50 of the Commission's Order cited by Southwestern Bell addresses the limited circumstances where a licensee for point-to-point facilities elects non-common carrier status with respect to related MMDS operations. The Commission's decision to permit such licensees to continue to hold licenses for common carrier point-to-point facilities licensed prior to electing non-common carrier status is simply not the situation presented here.

The waiver approach proposed in Hye Crest's application offers a flexible tool for spectrum management. Even opposing comments of MTN recognize this.

> MTN, NWB and PNB are not necessarily adverse to the reallocation of spectrum through the waiver process, as this process can potentially increase the flexibility of spectrum usage. (Informal Comments of MTN, NWB and PNB, P.2.)

By granting the requested waivers, the Commission will make possible the early introduction of new and innovative uses of previously unused spectrum. The public benefits of such new technology have already been described here and can be achieved without impairing the ability of common carriers to continue to

meet all foreseeable requirements for point-to-point services in the New York City area.

On the facts presented here, the public interest would be served by a Commission decision permitting Hye Crest to implement its proposed system for New York City as promptly as possible. The requested waivers address the circumstances of this specific market area so that Bell Atlantic's concern that grant of waivers here would somehow "prejudice" other "similar waiver applications"[39] is not valid. Hye Crest neither requests nor expects that Commission grant here would in any way diminish the requirement for submission of public interest showings to justify waivers requested in future applications, if any.

Finally, we emphasize that rulemaking is not always the best approach to spectrum management. A rulemaking proceeding is long and cumbersome. A rulemaking proceeding takes at least two years from the time a petition is filed, until the Commission issues a notice of proposed rulemaking, and then adopts a final rule. This is true in practice, in spite of Section 7(b) of the Communications Act:

> The Commission shall determine whether any new technology or service proposed in a petition or application is in the public interest within one year after such petition or application is filed....(47 U.S.C. 157, P.L. 98-214, December 8, 1983).

---

39 Bell Atlantic Comments P.4, FN.5

Moreover, rulemaking does not always result in spectrum management decisions that serve public needs.[40]

In contrast, the Hye Crest waiver application offers a sound and efficient way to make a spectrum management decision. A decision can be made in a few months rather than several years. It sets no precedent for a nationwide spectrum allocation pending the development of real world information on demand and costs based on operations initially granted pursuant to waivers as proposed here.

---

[40] The best recent example is the allocation of spectrum at 10 GHz and 18 GHz for Digital Electronic Message Service. In Docket No. 79-188, the Commission undertook a major investigation of spectrum needs for digital local distribution alternatives. The proceeding ran from November 16, 1978, when Xerox Corporation filed a petition for rulemaking (RM-3247) until a second report and order was issued on September 30, 1983. The five year DEMS rulemaking proceeding can now, in retrospect, be viewed as a misuse of Commission resources. Initially, there were numerous license applications submitted, including mutually exclusive applications, but few systems have been constructed. Most licenses that were awarded initially have now been canceled. Commission staff time spent on analyzing detailed technical pleadings, deciding on technical standards, and reviewing and processing mutually exclusive applications, could have been better spent in other proceedings. One can speculate on the reasons for this result. The demand estimates that were submitted to the Commission in the rulemaking proceeding were flawed. The equipment cost estimates and the projections of competing alternatives turned out to be inaccurate. The rulemaking proceeding was not an efficient vehicle for judging these estimates and projections, because it offered little in the way of real world experience.

9. HYE CREST'S REQUEST FOR GRANT OF REGULAR AUTHORITY IS ESSENTIAL TO THE ESTABLISHMENT OF A VIABLE SERVICE.

Hye Crest strongly opposes the comments of NSMA which suggest that its application should not be granted on a "grandfathered" basis.[41]

Hye Crest is proposing to provide a fully competitive video channel service for the public in New York. Any limitation by the license term customarily granted by the Commission would severely impair Hye Crest's ability to market its services in competition with the existing video services in the market. The public deserves to be able to rely upon the continued availability of Hye Crest's proposed system without the jeopardy of service interruptions imposed because of special limitations in its license which diminish the license term customarily granted for licenses under Part 21 of the Commission's rules.

Also potentially affected here are the rates and terms of service which Hye Crest will be able to offer. In order to be able to keep rates down and remain cost competitive with other video channel services, Hye Crest must have an adequate opportunity to amortize its construction expenses and start-up losses. Any diminishment of its license term (and related renewal expectancies) impairs its ability to use amortization schedules which approximate those used by its competitors and reduces its ability to price its services flexibly to maximize the availability of its services to

---

41 Comments of NSMA P.5.

the public.

While the foregoing matters underscore the importance of grant of regular authority for on-going service, it is also significant that a short-term grant of license authority here also has a direct impact on the cost and even the availability of risk capital to fund system construction and initial operation. In order to establish a viable competitive service, it is essential that these risks be diminished in the interest of fostering new and innovative service to the public by avoiding the unnecessarily restrictive limitations in license authority.

10. GRANT TO HYE CREST OF DEVELOPMENTAL AUTHORITY WOULD NOT SERVE THE PUBLIC INTEREST.

Grant of a developmental license, as also suggested by NSMA, is not appropriate or necessary here. Hye Crest is proposing to offer commercial video distribution service. It is not proposing an experiment, field strength surveys, the testing of equipment, or any other research and development such as could be conducted pursuant to a developmental authorization under Part 21, Subpart F.

Indeed, the Part 21 developmental service regulations are quite inconsistent with Hye Crest's proposal. The one year term of a developmental license (Section 21.404) is too short for all of the reasons discussed above in Section 9. The requirement for filing of a detailed developmental report each year (Section 21.406) would require disclosure of sensitive proprietary

information that would give unfair advantage to competitors in the video distribution business.

Finally, as NSMA noted,[42] a developmental application is inextricably intertwined with a rulemaking proceeding. Section 21.403(b) requires the filing of a petition for rulemaking along with an application for developmental authorization. As we have already argued, the rulemaking approach is not the best way for the Commission to proceed under the circumstances of this case.[43] In any event, the proposal at issue here is to provide commercial service rather than to experiment with the radio spectrum.[44]

11. CLAIMS WITH RESPECT TO NON-COMPLIANCE WITH SECTION 21.706 OF THE COMMISSION'S RULES IGNORE THE EXTENSIVE PUBLIC INTEREST SHOWINGS IN HYE CREST'S PROPOSAL

MTN argues in its Comments (PP.2-3) that Hye Crest's application should be supplemented to include an "order for

---

[42] Comments of NSMA P.3.

[43] The annual report and the requirement for a rulemaking petition should be eliminated from Part 21 as they were eliminated from Part 5. The Commission has already decided that elimination of such reports reduces burdens and expenses on both the Commission and the applicant, eliminates loss of proprietary information, and thereby encourages technological development. Report and Order in Gen. Docket No. 82-469, FCC 83-471, released November 16, 1983, at Paragraph 4.

[44] The NSMA argument that Hye Crest would not be eligible for a developmental authorization because Hye Crest is not a common carrier is specious. Hye Crest could certainly have elected to seek common carrier status. However, in order to minimize potential barriers to the development of its service and use of this unused frequency band, Hye Crest elected to request non-common carrier status.

service" and information regarding "projected future circuit growth." On both points its arguments fail to address the actual terms of Hye Crest's proposals. First, Hye Crest is proposing to provide service to the public on a non-common carrier basis. (Application, Exhibit 1, P.3). Second, Hye Crest will provide a video channel service to the public to be competitive with cable television. This means that like cable, it will compete with its full range of services throughout its service area. To the extent the rule sections cited by MTN are relevant here, Hye Crest's application, as supplemented here, explains fully how the public is intended to be served.

CONCLUSION

The foregoing discussion demonstrates that grant of Hye Crest's application will serve the fundamental objectives of the Communications Act by bringing competitive video services to the New York City market to compete with cable television and other video channel services. The public benefit of such competition, the merits of Hye Crest's system design to be able to offer a viable competitive service, the special characteristics of that system design which are expected to result in cost efficiencies and diversification of program service offerings to benefit the public and the fact that the proposed frequencies are not in use for any existing service, all are compelling reasons for the Commission to grant the above-captioned application as requested. We urge the Commission to do so promptly so that the benefits of Hye Crest's

proposed system can be made available to consumers in New York City at an early date.

Respectfully submitted,

HYE CREST MANAGEMENT, INC.

/s/ George Y. Wheeler
George Y. Wheeler
Koteen & Naftalin
Suite 1000
1150 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 467-5700

Its Attorney

EXHIBIT I

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, v. WESTERN ELECTRIC COMPANY, INC. AND AMERICAN TELEPHONE AND TELEGRAPH COMPANY, Defendants.	)	Civil Action No. 81-0192

STATE OF MASSACHUSETTS)
) ss.:
COUNTY OF SUFFOLK)

**AFFIDAVIT OF JERRY A. HAUSMAN
IN SUPPORT OF REQUEST OF NYNEX CORPORATION FOR A WAIVER
TO PROVIDE INTERNATIONAL TELECOMMUNICATIONS
TO AND FROM THE UNITED STATES**

JERRY A. HAUSMAN, being duly sworn, deposes and says:

1. I am Professor of Economics at the Massachusetts Institute of Technology in Cambridge, Massachusetts. I hold a D. Phil. (PhD.) in Economics from Oxford University. My academic and research specialties are econometrics, the use of statistical models and techniques on economic data, and microeconomics, the study of consumer behavior and the behavior of firms. I teach a course in "Competition in Telecommunications" to graduate students in economics and business each year. I have been a member of the editorial board of the Rand (formerly the Bell) Journal of Economics for the past 13 years. The Rand Journal is the leading economics journal of applied microeconomics and regulation. In December 1985 I

received the John Bates Clark Award of the American Economic Association for the most "significant contributions to economics" by an economist under forty years of age. I have received numerous other academic and economic society awards. A copy of my curriculum vitae is attached as Exhibit A to this Declaration.

2. I have done significant amounts of research in the telecommunications industry. My first experience in this area was in 1969 when I studied the Alaskan telephone system for the Army Corp of Engineers. Since that time, I have studied the demand for local measured service, the demand for intrastate toll service, consumer demands for new types of telecommunications technologies, marginal costs of local service, costs and benefits of different types of local services including the effect of higher access fees on consumer welfare, and consumer demands for new types of pricing options for long distance service. I have also studied the effect of new entry on competition in paging markets and interexchange markets.

3. I have extensive experience in antitrust matters, in particular with regard to telecommunications. I was retained as an economic expert by AT&T in the AT&T-MCI retrial litigation. During this litigation I did an extensive economic study of interexchange (long distance) telecommunications. More recently, I was the economic expert for Pacific Telesis (PacTel) in its acquisition of Communications Industries. I made an extensive study of the Consent Decree and markets for mobile telecommunications during the course of the PacTel acquisition. I have also submitted a declaration to this Court, on April 27, 1987, in which I analyze from an economic perspective the II(D) restriction of the Consent Decree with respect to the VIII(C) standard.